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## Introduction

1. On October 5, 2007, Waterbury Generation LLC (WatGen) filed a Petition for Declaratory Ruling (Petition) with the Connecticut Siting Council (Council) for the construction of an electric generating facility and associated transmission line tap in Waterbury, Connecticut (Project). (WatGen Exhibit (Exh.) 1).
2. The party in this proceeding is WatGen. Intervenors are The Connecticut Light and Power Company (CL&P), Naugatuck Valley Project (NVP) and The Brooklyn Neighborhood Association, The Town Plot Neighborhood Association, Mohawk Park Civic Club, The Hopeville Neighborhood Association, the Gilmartin Community Club and The Waterbury Neighborhood Council (collectively, the Neighborhood Groups).
3. Public notice of the Petition was published in the Republican-American on October 1, 2007 and October 2, 2007. (WatGen Exh. 1 at 5).
4. Pursuant to General Statutes §§ 16-50m, the Council, after giving due notice thereof, held a public hearing on January 8, 2008, beginning at 3:00 p.m. and continuing at 7:00 p.m. in the Brass City Room at The Sovereign Bank Building, 26 Kendrick Avenue, Waterbury Connecticut. The hearing was continued on February 1, 2008 in the offices of the Connecticut Siting Council, Ten Franklin Square, New Britain, Connecticut, beginning at 1:00 p.m. (Council Hearing Notice; 01/08/08 Afternoon Transcript (Tr.) at 3; 01/08/08 Evening Tr. at 3; Council Continued Hearing Notice; 02/01/08 Tr. at 3).
5. The Council and its staff made an inspection of the Site of the generating facility and the location where the transmission line tap will cross the Naugatuck River into Baldwin Street Substation. During the field review, a balloon was flown at the approximate location of the generating facility exhaust stack at an approximate height of 213 feet above ground level to be representative of the maximum proposed stack height. (Council Field Review Notice; Council Prehearing Conference Summary).

6. State Agency comments were solicited from the following State agencies on November 8, 2007: (1) Department of Environmental Protection (DEP), (2) Department of Public Health, (3) Council on Environmental Quality, (4) Department of Public Utility Control (DPUC), (5) Office of Policy and Management, (6) Department of Economic and Community Development, and (7) Department of Transportation (DOT). (Record).
7. State Agency Comments were received from the DOT on January 3, 2008 and from the DEP on January 8, 2008. Comments were received from the City of Waterbury (City), dated November 28, 2007. (Record)
8. In July 2007, WatGen commenced a community outreach campaign designed to keep State and local government officials, community leaders and Waterbury residents informed about its plan to construct the Project. As part of those efforts, WatGen met with various individuals and groups to discuss the Project, including Waterbury elected officials, Waterbury State legislators, Waterbury Department Heads, the Waterbury Development Corporation and local neighborhood organizations.
9. Prior to submitting the Petition, WatGen also held a public information forum and community open house at the Marriott Courtyard in Waterbury on September 12, 2007, at which it presented information about the Project and answered questions from the public. (02/01/08 Tr. at 132).
10. On November 18, 2007, WatGen met with a group organized by the Waterbury Neighborhood Council at Saint Anne's Church in Waterbury to discuss the Project. At that meeting, WatGen was asked if it would hold an additional public information session for those who were not able to attend either the September 12th Open House or the November 18th meeting. (WatGen Exh. 6 at 8-9).
11. On December 19, 2007, WatGen attended a public information session at South Congregational Church in Waterbury at which members of various organizations and neighborhood groups, including the Naugatuck Valley Project, Waterbury Neighborhood Council, Town Plot Neighborhood Association, Hopeville Neighborhood Association, Gilmartin Community Club and Brooklyn Neighborhood Association were present. At that session, WatGen presented information about the Project and responded to questions from the community. (WatGen Exh. 6 at 8-9).

#### **Public Need and Benefit of the Proposed Project**

12. The question of need for the Project has already been determined by the DPUC. Pursuant to Connecticut General Statutes § 16-243m, the DPUC initiated a request for proposal (RFP) process soliciting new or incremental capacity resources to reduce federally mandated congestion charges (FMCCs) and to improve the reliability of the electric system in Connecticut. (01/08/08 Afternoon Tr. at 4-5; 01/08/08 Evening Tr. at 4-5; Conn. Gen. Stat. § 16-243m; WatGen Exh. 6 at 3).

13. The DPUC retained London Economics, Inc. (LEI) to assist in all aspects of the RFP, including analysis of supply-demand conditions, development of the investment and needs analysis, design of the RFP and the associated contracts, coordination of the RFP process and analysis of the bid submissions. (WatGen Exh. 6 at 3).
14. On May 3, 2007, LEI issued a report titled "Recommendations on Selection of Projects in the 2006 Connecticut RFP Process" in which it detailed its findings, analysis, conclusions and recommendations and recommended a portfolio of four contracts, including the Project, for approval by the DPUC. (WatGen Exh. 6 at 4-5).
15. LEI concluded that the selected portfolio would create net economic benefits for Connecticut ratepayers totaling \$522 million on a weighted average basis during the first fifteen (15) years of operation because of the impact on wholesale costs of power, namely Locational Marginal Prices (LMP) in the energy market, capacity clearing prices in the Forward Capacity Market (FCM) and auction clearing prices in the Locational Forward Reserve Market (LFRM). (WatGen Exh. 6 at 4-5).
16. The Project was included in the selected portfolio because it will improve reliability and provide needed fast start generation capacity. In particular, the Project is capable of providing capacity and voltage support to the critical Southwest Connecticut zone, which has been identified by ISO New England (ISO NE) as severely constrained and supplying local load. (WatGen Exh. 6 at 5).
17. On August 22, 2007, the DPUC concluded that the portfolio of projects recommended by LEI would improve reliability, result in the lowest reasonable cost for the products and services provided and reduce FMCCs. Thus, the DPUC adopted LEI's recommendations and authorized a capacity contract for the Project. (WatGen Exh. 6 at 5).
18. WatGen estimates that the Project would create Connecticut ratepayer benefits of approximately \$50 million during the first ten (10) years of operation and of approximately \$200 million over the life of the Project because of the impact on wholesale costs of power, namely LMP in the energy market, capacity clearing prices in the FCM and auction clearing prices in the LFRM. (02/01/08 Tr. at 125-26).
19. During the construction of the Project, WatGen will pay over \$3 million in sales and use taxes. WatGen also projects that it will pay more than \$40 million in corporate taxes to the State of Connecticut and over \$110 million in property taxes to the City during the forty (40) year life of the plant. (WatGen Exh. 6 at 10).

#### **The Proposed Site**

20. The generation facility would be located on an approximate 9.3 acre parcel owned by Ansonia Copper & Brass, Inc. (ACB) at 725 Bank Street in Waterbury (the Property), a 2.25 acre portion of which will be leased by WatGen (Site). The Property is located in Waterbury's Industrial General (IG) Zoning District. (WatGen Exh. 1 at 6; 01/08/08 Afternoon Tr. at 26).

21. The Site is bordered by the Naugatuck River on the east, property leased by F.W. Webb on the west, the existing ACB Mill to the north and Washington Avenue to the south. (WatGen Exh. 1 at 6; 02/01/08 Tr. at 25-26).
22. The transmission line tap would run from the Site, in a southerly direction on the Metro-North right of way (ROW) to the existing CL&P transmission line ROW, then easterly along properties in the area to the Baldwin Street Substation (Transmission Route) for a total distance of approximately 1.8 miles. (WatGen Exh. 1 at 6; WatGen Exh. 2, Response (Resp.) 10; WatGen Exh. 2, Resp. 12).
23. The Transmission Route is abutted by various commercial and industrial properties and is located in Waterbury's IG Zoning District. (WatGen Exh. 1 at 6).

### **The Proposed Project**

24. The proposed Project would be comprised of three main components: the generating facility and associated switchyard, the transmission line tap and improvements at CL&P's Baldwin Street Substation. (WatGen Exh. 1; WatGen Exh. 15, Resp. 25; CL&P Exh. 1)
25. The generating facility will be a simple-cycle combustion turbine peaking generation facility with a net summer electric output of approximately 96 MWs. (WatGen Exh. 1 at 6-7).
26. All improvements associated with the generating facility will be located in previously disturbed areas and will include the following major components:
  - One General Electric LMS 100 Combustion Turbine Generator Package;
  - An exhaust stack with a maximum height of 213 feet attached to the turbine generator enclosure and a Selective Catalytic Reduction (SCR)/Carbon Monoxide (CO) removal system;
  - One 15,000 gallon aqueous ammonia tank used for the SCR system, which will be fitted with level alarms, area monitors, a secondary dike enclosure with 110% containment and a vapor suppression system within the dike area;
  - One 364,000 gallon ultra-low sulfur distillate oil storage tank with 110% containment and associated process piping and equipment;
  - One 100,000 gallon demineralized water storage tank and associated process piping, water processing trailers and equipment;
  - Small hold-and-haul tanks to manage process wastewater and oil-water separators for release of storm water discharges;
  - An approximately 3,000 square foot switchyard containing a circuit breaker, disconnect switches and the generator step-up transformer, with 110% oil containment; and
  - Station motor control enclosures which include motor starters, control equipment and other electrical equipment.

(WatGen Exh. 1 at 6-7, 15; WatGen 15, Resp. 26).

27. WatGen selected General Electric's (GE) LMS 100 Combustion Turbine Generator Package for its high efficiency, state of the art safety features, low noise and reduced environmental impacts. The LMS 100 was specifically designed by GE for installation and operation in urban areas and is outfitted with sophisticated monitoring and control equipment. The LMS 100 reaches simple cycle thermal efficiencies of approximately forty-five percent (45%), which is a ten percent (10%) improvement over nearly every other turbine in its size range. (WatGen Exh. 7 at 7).
28. The Site will be surrounded by an eight foot (8') tall fence, key card access gates, security lighting and video surveillance cameras. Three sides of the fence will be of solid construction with architectural features designed to deter climbing (e.g., razor wire) and the fourth side, which is located within the existing ACB fence and is not accessible to members of the general public, will be a chain link fence. (WatGen Exh. 15, Resp. 33; 02/01/08 Tr. at 43, 47-48).
29. The transmission line tap will be designed and constructed to CL&P standards. Upon completion and confirmation by CL&P that the transmission line tap has been constructed in accordance with CL&P's standards, ownership of the transmission line tap and all easements necessary to construct, operate and maintain the line will be transferred to CL&P. (WatGen Exh. 1 at 3).
30. The final design of the transmission line tap is not yet complete. WatGen expects, however, that the transmission line will leave the Metro-North ROW and cross Municipal Road to the east onto property owned by the City, on which is located the City's Waste Water Treatment Plant (WWTP). (WatGen Exh. 2, Resp. 10).
31. At this stage of design, WatGen plans to have 23 structures along the Metro-North ROW and 3 or 4 structures on the City property at the site of the Waterbury WWTP. Most of the towers will range between a low of 77 feet and a high of 82 feet and two towers will be approximately 125 feet in order to provide adequate clearance to CL&P distribution circuits on the South Leonard Street overpass. The route of the line is proposed to be North to South along the Metro-North ROW and West to East from the City Waste Water Treatment Plant across the Naugatuck River and into the Baldwin Street Substation. (WatGen Exh. 15, Resp. 20).
32. There are no existing towers or pole type structures on the portion of the Metro-North ROW proposed for the transmission line route and there is one CL&P structure (a 165-foot tall steel lattice tower structure) in the existing CL&P ROW that runs east to the Baldwin Street Substation. This structure supports two 115kV transmission lines and three distribution circuits that cross over Route 8 and tie into the Baldwin Street Substation. (WatGen Exh. 15, Resp. 8; WatGen Exh. 15, Resp. 9).
33. The 115 kV transmission line tap will be single circuit design and will be mounted on painted or galvanized monopole steel structures. Transmission pole spacing will vary based on the final route selected for interconnection with the Baldwin Street Substation

and the final design layout required to meet appropriate Metro-North and CL&P standards. (WatGen Exh. 1 at 10).

34. Although the cost of the transmission line tap will depend on final engineering and final construction estimates, with the design about 60% completed, using Valmont hybrid poles, WatGen estimates that the interconnection, as proposed, will cost between \$3 and \$4 million. (WatGen Exh. 15, Resp. 20).
35. WatGen estimates the minimum cost to construct an underground cable connection from the Site to Freight Street Substation via Bank & Jackson Streets and across State property would be approximately \$9 million and from the Site to Freight Street Substation via Bank, Meadow & Freight Streets would be approximately \$12 million. These estimates for underground connection are based on the following assumptions that, if proved to be incorrect, would significantly increase this cost:
  - The Naugatuck River crossing will be made by attaching cables to the underside of an existing, unused railroad bridge;
  - Easements can be obtained at no cost from the private parties between the end of the State property and Freight Street;
  - Trenching can be accomplished without the need for blasting and rock removal; and
  - Environmental compliance costs related to soil excavation are limited to \$100/ton.

(WatGen Exh. 15, Resp. 40).

36. An interconnection to Freight Street Substation would also require additional interconnection studies by ISO NE and CL&P, which would require another set of analyses that would delay the Project beyond the July 2009 contractual commercial operation date. In addition, underground construction of a transmission line is generally far more intrusive to the environment and can actually result in higher levels of EMF exposures to the general public than the planned overhead transmission line. (WatGen Exh. 15, Resp. 40).
37. The generating facility will interconnect at the CL&P Baldwin Street Substation at 115 kV through the transmission line tap being constructed as part of the Project. To accommodate this interconnection, a switchyard encompassing approximately 3,000 square feet will be constructed at the Site to the south of the generating facility. The switchyard will be separated from the remainder of the generating facility by an 8-foot high fence installed to meet Occupational Safety and Health Administration (OSHA) requirements for this type of facility. (WatGen Exh. 1 at 9).
38. The switchyard will contain the main generator breaker, an oil-filled 13.8/115 kV generator step-up transformer, a dry-type station service transformer, isophase bus duct, a generator circuit breaker, a switchyard control house, breaker disconnect switches and appropriate transition structures for the interconnection to the new transmission line tap. All medium and high voltage transmission components will be above ground. (WatGen Exh. 1 at 9).

39. At the Baldwin Street Substation, a new termination pole or structure, underground high voltage cable, circuit breaker and disconnect switch will be added to the existing substation to accept the new line position. The following equipment will be installed at Baldwin Street Substation:

- Line Motor Operated Disconnect (MOD)
- Mobil transformer position MOD
- 115 kV circuit breaker
- Three manual disconnect switches
- Three Potential Transformers
- Power and control cable and conduit from equipment to the control house
- One primary relay panel
- One duplex panel
- Associated protection and controls equipment.

(WatGen Exh. 1 at 9; WatGen Exh. 15, Resp. 25).

40. In its prefiled testimony, CL&P raised concerns about the construction and operation of the transmission line tap. In particular, CL&P requested that the Council impose certain conditions as part of its decision in this proceeding related to the agreements between CL&P, WatGen and/or third parties concerning the construction and operation of the transmission line tap. (CL&P Exh. 1).
41. Throughout the course of the proceeding, WatGen acknowledged that the construction and operation of the transmission line tap will be subject to CL&P's review and approval of all license agreements and/or easements and design and construction. During the hearing, CL&P's witness admitted that this was the case and that WatGen has already assured CL&P that its rights would be protected. (WatGen Exh. 1 at 3; 01/08/08 Evening Tr. at 80-81).

#### **Project Construction**

42. Construction of the Project is expected to last approximately 15 months, with a peak period of about three months beginning in December 2008. (WatGen Exh. 1 at 18-19).
43. In accordance with the Connecticut Soil Erosion Control Guidelines, as established by the Council for Soil and Water Conservation, WatGen will establish and maintain adequate and appropriate soil erosion and sedimentation control measures the Project construction period. To reduce the potential for pollutants being discharged into any nearby watercourse or wetland area or to area groundwater, WatGen will employ appropriate construction management practices during construction of the Project. (WatGen Exh. 1 at 19).
44. In conjunction with the construction process, the Site will be remediated in accordance with the DEP's Remediation Standard Regulations under the direction of a Licensed Environmental Professional. (WatGen Exh. 1 at 11).

45. During Project construction, there would be a maximum projected peak number of 125 craft labor employees present at any one time, with an average number of 70 workers. (WatGen Exh. 1 at 18-19).
46. Construction would generally occur between 7:00 a.m. and 7:00 p.m., Monday through Friday. (WatGen Exh. 1 at 18-19).
47. Construction access to the Site will be from Bank Street, and truck traffic during construction will be dispersed throughout the day to support both material movement and equipment deliveries. (WatGen Exh. 1 at 18-19; 02/01/08 Tr. at 141).

#### **Facility Operation**

48. The proposed Project is a peaking generation unit that is expected to operate approximately four to six weeks per year depending on weather conditions and load requirements. (WatGen Exh. 6 at 7).
49. For the first ten (10) years of operation, pursuant to the terms of the Master Agreement for Generation Projects, dated May 21, 2007, between WatGen and The United Illuminating Company (Master Agreement), the facility is required to operate as a peaking generation unit in order to satisfy its obligation to participate in the LFRM. (WatGen Exh. 6 at 7).
50. WatGen does not anticipate that the Project will be converted to a base load unit in the future. Peaking generation is the least expensive way to serve incremental demand during peak periods. The characteristics of this generator (i.e., heat rate) would make it uneconomic to have this plant operate as a base load unit (i.e., 24 hours per day/7 days per week). (WatGen Exh. 6 at 7).
51. The generating facility will be monitored and operated remotely from a dispatch office, which is staffed around the clock every day of the year, as is typical of peaking generating units. (WatGen Exh. 7 at 8).
52. When the unit is in operation, a WatGen employee will be sent to the unit to monitor the operation of the unit. In addition, when fuel oil and ammonia deliveries are made to the facility, a WatGen employee will be in attendance to supervise and assist. (WatGen Exh. 7 at 8; WatGen Exh. 15, Resp. 17).
53. The design life of the generating facility and associated equipment is forty (40) years if the facility were run consistently at maximum capacity. Because the generating facility is a peaking unit, it will run significantly less. Thus, WatGen anticipates that the actual service life of the facility will exceed forty (40) years with proper maintenance. (02/01/08 Tr. at 112).



### Fuel Supply

54. The primary fuel supply for the generating facility will be natural gas that will be delivered via a high pressure gas main through an interconnection, likely with Yankee Gas. It is anticipated that the natural gas line will run from the Yankee Gas Waterbury distribution facility down Railroad Hills Street to the WatGen generating facility, over a distance of approximately 4,700 feet. An electrically driven compressor at the generating facility will boost the pressure to the required pressure level at the combustion turbine. (WatGen Exh. 1. at 8; WatGen Exh. 2, Resp. 7).
55. The DEP has concluded that the installation of the natural gas line in or along the currently contemplated route "should entail minimal impacts." (DEP Comments at 2).
56. WatGen is currently negotiating the terms of the natural gas interconnection agreement with Yankee Gas. Once those negotiations are complete, WatGen anticipates that Yankee Gas will apply for any permits or approvals necessary for the installation of the natural gas line. (WatGen Exh. 2, Resp. 7; 01/08/08 Afternoon Tr. at 43).
57. The Master Agreement requires WatGen to provide for storage of alternative fuel other than natural gas at the Site. The criterion requires the capability to operate at the Summer Seasonal Claimed Capacity for 40 consecutive hours. (WatGen Exh. 2, Resp. 3).
58. Ultra-low sulfur distillate oil (ULSD) will be the secondary fuel source. The on-Site 364,000-gallon ULSD storage tank will allow for approximately forty (40) hours of operation at one hundred percent (100%) generating capacity without the need for further fuel deliveries. Operation of the combustion turbine at one hundred percent (100%) load will require approximately 6,000 gallons per hour of ULSD. (WatGen Exh. 1 at 8).
59. The design of the fuel unloading, storage and filtering system at the generating facility will follow GE Guidelines for fuel purity. Periodic fuel samples will be taken to ensure that the stored fuel meets applicable fuel standards. The tank will be equipped with condensate drains and a removal system to ensure no build-up of water in the tank. WatGen does not anticipate any degradation in ULSD quality nor does WatGen expect that operations or emissions when burning this fuel will be affected in any way. (WatGen Exh. 15, Resp. 32).
60. WatGen's air permit would limit ULSD use to the fuel equivalent of 720 hours per year. WatGen anticipates that it will only burn ULSD at those times when natural gas is unavailable or curtailed. (WatGen Exh. 1 at 8; WatGen Exh. 1, Tab 10).
61. The 364,000 gallon ULSD storage tank would be protected by secondary containment capable of containing 110 percent of the tank's capacity and with cathodic protection to detect any leaks or spills. (WatGen Exh. 1 at 6-7).

### Water Use

62. The proposed Project will require water for evaporative cooling of the inlet air, the nitrogen oxide (NOx) control system and the mechanical draft cooling tower.
63. The Project would require a maximum of 442,000 gallons per day of water if it were operated for 24 consecutive hours. Because the Project is a peaking facility, it is very unlikely that the plant will run for more than 6 to 8 hours per day during 4 to 6 weeks of the year. (WatGen Exh. 6 at 7; WatGen Exh. 15, Resp. 39).
64. The water quality required for the water injection NOx controls and the intercooler functions of the GE LMS 100 is very strict and, even with the use of potable water, would require further demineralization to ensure the purity of water to be introduced into the sensitive equipment. (WatGen Exh. 15, Resp. 39)
65. WatGen studied the potential use of water from the Naugatuck River or from groundwater on the Property; however, due to the Class C quality of the river and the Class B quality of the groundwater, additional treatment would be required, which would make the Project uneconomical. Similarly, the use of treated effluent from the Waterbury Waste Water Treatment Plant would not be feasible because the proposed generating facility would be located approximately 1.8 miles from the WWTP and piping of the effluent would not be economical. (WatGen Exh. 1 at 20; WatGen Exh. 15, Resp. 39).
66. Although WatGen did consider the use of a dry air cooling system, the Project was bid into the DPUC assuming a wet system because the cost of implementing a dry system would otherwise render the Project uneconomical. Moreover, the Site does not have sufficient space to allow the use of an air cooling system as a rectangular footprint of approximately 150 feet by 300 feet is needed for an air cooled heat exchanger. (WatGen Exh. 1 at 20; WatGen Exh. 15, Resp. 39).
67. The City has capacity to supply up to 27 million gallons of potable water per day but is only projected to use up to 17.5 million gallons per day through the year 2050. (WatGen Exh. 6 at 7; WatGen Exh. 15, Resp. 39).

### Water Discharge

68. Wastewater discharges from the Project will include water from domestic uses (sanitary), and pump seal and condensate discharges (miscellaneous wastewater) and cooling tower blowdown. (WatGen Exh. 1, Tab 18).
69. The Project will discharge an average of 37 gallons per minute or approximately 35,000 gallons per day of sanitary and miscellaneous wastewater. (WatGen Exh. 1, Tab 18; 01/08/08 Afternoon Tr. at 26-27).

70. Wastewater from the Project will be discharged to the existing municipal sanitary sewer system for collection and treatment at the City's WWTP, which is permitted for a design flow of 27,050,000 gallons per day. (WatGen Exh. 1, Tab 18).
71. Wastewater generated by on-Site processes will not require pretreatment prior to discharge and will be permitted pursuant to existing DEP General Permits. (WatGen Exh. 1 at 21; 02/01/08 Tr. at 129).
72. The Site is in an area on the Property outside of the existing mill area, which is paved and has a permitted storm water discharge to the Naugatuck River. The generating facility will utilize the existing storm water outfalls as part of the monitored drainage from the Site. WatGen will obtain appropriate storm water permits from the DEP for construction activities and operation of the generating facility. (WatGen Exh. 1 at 21).
73. The Transmission Route will follow the existing Metro-North rail line and existing CL&P transmission line ROW. The construction of the transmission line tap will likely include the installation of augured foundations (either cast in place or pre-cast bases that will be field placed). This construction will not impact any drainage paths or create any new storm water flows. (WatGen Exh. 1 at 21).

#### **Fire Protection**

74. The combustion turbine is protected with a number of redundant safety shutdown features designed to prevent catastrophic failures in the event of any malfunctions. The equipment has a carbon dioxide fire suppression system which is designed to contain any fuel fed fires. (WatGen Exh. 1 at 14-15).
75. The generating facility will utilize the following fire protection systems:
  - A carbon dioxide (CO<sub>2</sub>) fire protection system with fire detection sensors and suppression in the turbine equipment compartment;
  - A concrete explosion barrier/fire wall between the generator step-up transformer and the combustion turbine;
  - Fire hydrants/hose stations with water supplied to the generating facility via the City water system; and
  - Building and structures will be equipped with portable fire extinguishers as required by local fire regulation.

(WatGen Exh. 1 at 14-15).

76. Plant operational procedures will include all information necessary to permit all fire-fighting and other emergency response agencies to plan and implement safe responses to fires, spills and other emergencies at the Site. (WatGen Exh. 1 at 14-15).
77. WatGen met with Chester Bennett, the Waterbury Fire Marshal, in August 2007 to discuss the Project. WatGen again met with Chester Bennett and members of his staff on January 24, 2008 to review the details of the entire Project with respect to potential Site

hazards and emergency response both during construction and operation. (WatGen Exh. 15, Resp. 27).

78. During that meeting, the layout of equipment within the Site and in the existing mill was discussed in detail, along with specific types of equipment contained in each of the modular components of the Project. It was agreed, during the meeting, that no special training or equipment would be needed by emergency response personnel to respond to on-Site emergencies. (WatGen Exh. 15, Resp. 27).
79. Once construction is complete, WatGen will conduct familiarization tours of the Site with the Fire Department and establish emergency response protocols with the Department to be able to aggressively manage any emergency that may occur on Site. If it is later determined that special training or equipment is required, WatGen has agreed to pay for the costs of such training or equipment. (WatGen Exh. 15, Resp. 27; 02/01/08 Tr. at 68).

### Visibility

80. On August 28, 2007, a field survey of potential viewsheds of the Project was conducted. Photographs were taken from locations with possible views of the Project and then the Project was photogrammetrically superimposed onto those photographs. (WatGen Exh. 1, Tab 15).
81. Although photographs were taken along the streets from various directions around the Project, existing houses, trees and infrastructure blocked views of the Project from most locations. The closely spaced housing and mature trees in the area obstruct views of the Project from most street locations, making it difficult to find locations with clear sight lines to the Project. (WatGen Exh. 1 at 18, Tab 15).
82. The most prominent feature of the proposed Project that is expected to be visible would be the 213 foot exhaust stack. Assuming a maximum stack height of 213 feet, the exhaust stack associated with the Project will be visible from some surrounding commercial and industrial areas that have open lots and few trees and along streets with direct sight lines. (WatGen Exh. 1 at 18, Tab 15).
83. Based on preliminary modeling, the proposed stack height of two hundred thirteen feet (213') is the maximum required to comply with the new "CTDEP Interim PM2.5 New Source Review Modeling Policy and Procedures." WatGen is currently working with the DEP to determine if the height of the stack can be reduced. (02/01/08 Tr. at 18; DEP Comments).
84. WatGen intends to construct the exhaust stack at the minimum height acceptable to DEP that is protective of human health and the environment. Based on preliminary modeling, WatGen anticipates that the height of the exhaust stack can be significantly reduced. (02/01/08 Tr. at 18). A reduction in the height of the stack would reduce the visibility of the Project.

85. On August 23, 2007, WatGen submitted a Notice of Proposed Construction or Alteration (Notice) to the Federal Aviation Administration (FAA) describing the proposed stack height and location relative to Waterbury-Oxford Airport, the nearest registered airport. The FAA acknowledged receipt of the Notice and indicated that marking and lighting will be required because of the proposed height of the exhaust stack. (WatGen. Exh 1 at 12; WatGen Exh. 3).
86. If, based on the modeling analysis WatGen submits to DEP, the height of the exhaust stack is reduced, WatGen will submit a revised Notice to the FAA with this refined information. Based on FAA guidance, if the height of the stack is reduced below 200 feet, WatGen does not anticipate that any lighting or marking will be required, which would further reduce the visibility of the Project. (02/01/08 Tr. at 20-21, 99).
87. During the course of the proceeding, several members of the public raised concerns about the impact of the transmission line on a proposed riverwalk. Except where it actually crosses the Naugatuck River, the transmission line tap is going to be located several hundred feet from the river and there are numerous industrial buildings between the river and the location of the transmission line. The distance of the transmission line from the river and the intervening structures should block the visibility of the transmission lines. (02/01/08 Tr. at 130-31).

#### Noise

88. A Noise Analysis Report was completed for the Project to determine the projected increases over existing ambient conditions. The assessment consisted of: (a) determining the existing ambient noise environment through a monitoring program; and (b) completing a noise modeling/impact evaluation of the Project. The noise impact evaluation used computer modeling to determine the sound levels of the major noise producing equipment at the Project (based on data obtained from the vendors of the equipment) and evaluated those levels against the State of Connecticut and City of Waterbury noise standards at bordering zones and nearby residential areas. (WatGen Exh. 1 at 17, Tab 14).
89. The closest residential receptors are located approximately 1,200 feet from the Site. (WatGen Exh. 1, Tab 14).
90. The noise modeling analysis included a silencer for the exhaust stack. The required noise reduction from the exhaust stack was determined by using the noise model as a design tool and adding control as needed in order to achieve compliance with the noise standard. The noise limit specifications for the exhaust stack, developed from the noise modeling, were provided to the vendor. The vendor responded that it would be able to meet the noise limit for the exhaust stack with the use of a silencer. (WatGen Exh. 15, Resp. 34).
91. In order to further mitigate any potential off Site noise impacts, after the Petition was submitted, WatGen decided to modify its original fence design from a chain link fence to a solid eight (8) foot high fence around three sides of the Site. The solid fence will

reduce noise levels in the vicinity of the generating facility Site. (WatGen Exh. 15, Resp. 33).

92. As part of its analysis, WatGen also reviewed the potential for off-Site vibrations from the generating facility. The equipment at the generating facility is designed to operate at very low vibration levels and will include sophisticated vibration monitoring and detection systems that would shut down the generating unit in the event of a vibration excursion. None of the equipment at the switchyard is anticipated to create vibrations. (02/01/08 Tr. at 16-18, 90-92).
93. With the use of noise mitigation measures, such as a silencer in the combustion turbine exhaust stack, increases in total average noise levels would be minimal and the sound level from the Project would be in compliance with the State of Connecticut and City of Waterbury noise standards at all residential and industrial property lines. (WatGen Exh. 1, Tab 14; WatGen Exh. 15, Resp. 33).

### **Traffic**

94. Construction access to the Site will be from Bank Street, and truck traffic during construction will be dispersed throughout the day to support both material movement and equipment deliveries. Once construction is completed, access to the Site will be provided from Washington Avenue, which provides a connection to Route 8. (WatGen Exh. 1 at 18-19; 02/01/08 Tr. at 141)
95. During Project construction, there would be a maximum projected peak number of 125 craft labor employees present at any one time, with an average number of 70 workers. Construction would generally occur between 7:00 am and 7:00 pm, Monday through Friday. Once constructed, operation of the generating facility will require a minimal number of employees. (WatGen Exh. 1 at 18-19).
96. Neither construction nor operation of the Project will have a significant impact on the traffic operating conditions in the surrounding area. (WatGen Exh. 1, Tab 16).

### **Historic and Archaeological Effects**

97. Prior to submission of the Petition, WatGen contacted the Connecticut Historical Commission State Historic Preservation Office (SHPO) about the Project. On September 18, 2007, the SHPO indicated that the Project will have no adverse effect. The SHPO noted, however, that ACB possesses historic and industrial importance and requested that certain mitigation measures be taken, including: (a) documentation of the historic value of the ACB facility to be provided to SHPO for permanent archiving and public accessibility (Documentation Report); (b) retention of an industrial archeologist to monitor the construction process and document any industrial archeological remains that are exposed during Project-related ground disturbances (Documentation & Monitoring); and (c) preparation of a brief summary to be submitted to the Society for Industrial

Archeology New England Chapter's Newsletter (Newsletter Article). (WatGen Exh. 1 at 16).

98. In response to the SHPO's requests, WatGen retained an industrial archaeologist, Dr. Michael S. Raber. Dr. Raber prepared the Documentation Report, which was submitted to the SHPO on December 24, 2007. In preparing the Documentation Report, Dr. Raber reviewed information about the Project and the archaeological characteristics of the Site. Based on this review and Dr. Raber's recommendation, by letter, dated January 3, 2008, the SHPO determined that Documentation & Monitoring would not be required. At the close of the Record, Dr. Raber was preparing the requested Newsletter Article to be submitted by February 15, 2008. (WatGen Exh. 4; WatGen Exh. 11; WatGen Exh. 14; 01/08/08 Afternoon Tr. at 27028).

### Wetlands

99. Based on the Wetland Zone Map from the City Geographic Information System (GIS) database, no wetlands occur within the Site or along the Transmission Route. Additionally, based on field surveys, WatGen determined that there are no wetlands on the Site or along the proposed Transmission Route. (WatGen Exh. 1 at 19; WatGen Exh. 5).
100. Some of the proposed facilities, including the ULSD aboveground storage tank are proposed within the 100-foot buffer of the Naugatuck River floodplain. WatGen will employ best management practices such as soil erosion controls, secondary containment measures and the implementation of a Spill Prevention, Control and Countermeasure Plan to ensure protection of the Naugatuck River. (WatGen Exh. 1 at 19-20).
101. The riverbank in the area of the tank is retained with a massive fitted stone wall. Geotechnical subsurface analyses in the location of the fuel oil tank were conducted by professional civil engineers. The results of the testing confirm that the area is stable, will adequately support the tank and its contents and that foundation piles are not required for this area of the Site. (WatGen Exh. 15, Resp. 35; WatGen Exh. 15, Resp. 36).

### Ecology

102. Prior to submission of the Petition, WatGen contacted the United States Department of Fish and Wildlife Service (USFWS) and the DEP about the Project. In response, DEP indicated that there are no known extant populations of Federal or State endangered, threatened or special concern species in the Project area. The USFWS indicated that no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the USFWS are known to occur in the Project area. (WatGen Exh. 1 at 16).
103. The Project is located within a heavily developed commercial and industrial area between Route 8 and South Main Street (Industrial Corridor). According to the City's GIS

database Parks Map, there are no recreational areas within the Industrial Corridor. (WatGen Exh. 1 at 17).

104. The closest recreational lands are the outdoor recreational facilities associated with the Barnard School located beyond Route 8 approximately 1,500 feet west of the Project and also the Washington School 1,500 feet to the east beyond South Main Street. There may also be limited recreational facilities associated with the Duggan School that is currently being renovated and which is located approximately 800 feet west of the Project. Based on the location of the Project within the Industrial Corridor and the boundaries between the Project and these recreational areas created by Route 8 and South Main Street, the Project is not expected to impact recreational areas or values in the area. (WatGen Exh. 1 at 17-18; 02/01/08 Tr. at 134)
105. The Naugatuck River itself is a Class C river and at this time has limited to no recreational value. (WatGen Exh. 1 at 18).
106. Washington Park is located 2,500 feet east of the Site, beyond the Washington School. Based on the location of the Project within the Industrial Corridor and the boundaries between the Project and this area created by Route 8 and South Main Street, the Project is not expected to impact recreational areas or values in the area. In addition, WatGen has committed to fund the construction of a park in Waterbury to further enhance recreational values in the area. (WatGen Exh. 1 at 17-18; 02/01/08 Tr. at 25-27).

#### Air Quality

107. Air quality in the Waterbury area meets state and federal standards except for ozone and PM<sub>2.5</sub>. Connecticut is considered to be in an area of "non-attainment" for ozone and Fairfield County and New Haven County are designated as "non-attainment" for PM<sub>2.5</sub>. (WatGen Exh. 1, Tab 10).
108. The Project will incorporate Best Available Control Technology (BACT) to minimize air emissions and will comply with all applicable State of Connecticut and U.S Environmental Protection Agency (EPA) emissions standards for new sources in this category. (WatGen Exh. 1 at 12, Tab 10).
109. WatGen submitted an Air Permit Application for New Source Review (Air Permit Application) to the DEP, on September 4, 2007, for approval to construct and operate the generating facility. (WatGen Exh. 1 at 12, Tab 10).
110. During the course of the proceeding, concerns were raised regarding the data used to support the analysis and modeling in the Air Permit Application. To be approved for use in regulatory dispersion modeling analyses, meteorological data must meet numerous criteria with respect to the parameters measured, the period of record, the data capture rate and quality assurance. From among the available data sets that meet the required criteria, the most representative set of data for the Project Site are used for air permitting purposes; in this case, Bradley Airport data. (WatGen Exh. 15, Resp. 43).



111. Bradley Airport is the closest meteorological station with a full five year period of record, known high quality data and all the variables needed for air quality modeling input. Bradley Airport station is climatologically representative of Waterbury. For instance, the wind rose at both locations (i.e., Bradley and Waterbury) would be expected to be similar because both are located in river valleys that are oriented from north to south. The National Climatic Data Center includes Bradley Airport and Waterbury in the same Central Connecticut Climate Division (a region within a state that is reasonably homogeneous with respect to climatic characteristics). (WatGen Exh. 15, Resp. 42).
112. DEP's Ambient Impact Analysis Guideline recommends the use of the data from Bradley Airport for the Waterbury area. (WatGen Exh. 15, Resp. 43).
113. The EPA has established National Ambient Air Quality Standards (NAAQS) that are designed to protect the public health and welfare with an adequate margin of safety for the most sensitive individuals (e.g., children, elderly, asthmatics). As a condition of its air permit, WatGen will be required to comply with these NAAQS. (02/01/08 Tr. at 14).
114. As a condition of its air permit, WatGen will be required to monitor and report emissions data to the DEP. In particular, WatGen will be required to perform stack testing of the emissions at the initial start of operations and stack emissions testing will be conducted for all permitted pollutants every five years thereafter. (WatGen Exh. 15, Resp. 31).
115. A continuous emissions monitor (CEM) system will be installed on the stack to monitor air emissions at all times during facility operation. These emissions will be measured every 10 to 15 seconds and recorded to an electronic data management system. Alarms will be set in the control system to notify the operator if air emissions are approaching emission permit limits. If an alarm were to occur, a diagnostics would be performed and if the emissions reached or exceeded the air permit levels, the unit would be shut off. The emissions data will be uploaded to the EPA website on a quarterly basis where it will be analyzed by both EPA and the DEP. (WatGen Exh. 15, Resp. 31).
116. On a semi-annual basis, WatGen, as the holder of a Title V air operating permit, will be required to certify compliance with all permit requirements and report any violations of any air emission limits to DEP immediately. (WatGen Exh. 15, Resp. 31).

#### **Safety Considerations**

117. The 15,000 gallon aqueous ammonia tank used for the SCR system associated with the generating facility will be fitted with level alarms, area monitors, a secondary dike enclosure with 110% containment and a vapor suppression system within the dike area. All connecting piping will be of double wall construction. (WatGen Exh. 1 at 15).
118. The SCR system will utilize a 19% solution of aqueous ammonia. Aqueous ammonia is a solution of water and ammonia that is commonly used in industrial applications. The nineteen percent (19%) aqueous ammonia solution is non-flammable and is not explosive when stored at ambient temperature and pressure conditions, as is the case for the

WatGen facility. By comparison, ammonia for household uses is an approximately ten to fourteen percent (10-14%) solution. (WatGen Exh. 15, Resp. 26).

119. EPA does not require the preparation of a Risk Management Plan for solutions of ammonia of less than 20% concentration because the risk associated with vapor plume dispersion and transport in the unlikely event of a spill or tank rupture from such a solution is very low. (WatGen Exh. 15, Resp. 26).
120. The solution will be stored in a horizontal 15,000 gallon steel tank designed to applicable American Society of Mechanical Engineers (ASME) design codes for this type of tank. The tank structure will be located 27 feet away from the existing building. There will be a concrete dike around the tank that will contain the entire contents of the tank plus an additional margin of ten percent (10%). (WatGen Exh. 15, Resp. 26).
121. In the event of a spill or leak, the open surface in the dike area will be covered with small hollow plastic balls that will float on the surface of the liquid and limit the amount of evaporation by up to ninety percent (90%). Due to the low vapor pressure of the aqueous ammonia solution, very little evaporation will occur. (WatGen Exh. 15, Resp. 26).
122. The aqueous ammonia solution will be unloaded in an area specially designed to contain the entire content of the truck and will prevent the escape of liquid outside of the unloading area in the event of a rupture of an unloading hose of the delivery tanker itself. All suppliers selected to deliver the aqueous ammonia to WatGen will be required to be equipped with all safety provisions, including the use of Department of Transportation (DOT) qualified trailers, certified and trained drivers and appropriate hazard protection measures for unloading. (WatGen Exh. 15, Resp. 26).
123. Electrical safety of the generator step-up transformer, the generator breaker and the disconnect switch is assured with a separate fenced enclosure along with high speed digital relaying designed to isolate a fault in a matter of milliseconds. (WatGen Exh. 1 at 15).

#### **Electric and Magnetic Fields**

124. The transmission line tap will comply with CL&P's requirements for the construction of new transmission lines and the Council's "Best Management Practices for Electric and Magnetic Fields." In particular: (1) the line is proposed to be located away from sensitive areas (schools, playgrounds, health care facilities) in an industrial park alongside a railroad line, (2) the line is designed to have a minimum conductor height of no less than 32 feet, and (3) the line design employs a compact conductor geometry (10 foot spacing). (WatGen Exh. 1 at 13).
125. Over the past three decades, research has been conducted around the world to identify whether long term exposures to electric and magnetic fields (EMF) have health or environmental effects. Power frequency EMF (60 hertz) is found wherever electricity is generated, transmitted, delivered or used. In the United States, power lines, household

electrical systems, workplace power tools, electrical appliances and motors all produce power frequency EMF. EMF produced by an overhead electric transmission line is a function of a number of factors such as operating voltage, load current, distance from the conductor and the geometric configuration of the conductors. (WatGen Exh. 1 at 12-13).

126. There are no federal standards for power frequency EMF. Scientific organizations have reviewed the research to date and developed general recommendations regarding EMF exposure for workers and the general public. The purpose of these guidelines is to avoid exposures to fields that could lead to adverse health effects. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has developed guidelines as part of a program for the World Health Organization (WHO) and recommends that the general public exposure to power frequency magnetic fields be limited to no more than 833 milligauss (mG) and occupational exposure be limited to no more than 4,167 mG. See "Guidelines for limiting exposure to time varying electric, magnetic and electromagnetic fields (up to 300 GHz.)," Health Physics 74 (4) 494-522 (April 1998). (WatGen Exh. 1 at 13; WatGen Exh. 15, Resp. 23).
127. The proposed transmission line tap will only affect ambient levels of EMF, with the greatest effect in the immediate area of the transmission line tap. In estimating anticipated EMF from the transmission line tap, WatGen made the following conservative assumptions: (a) maximum line loading of 96 MW (based on full output without accounting for losses through the main generator step-up transformer); (b) minimum conductor height of 25 feet (actual height is expected to be 32 feet); and (c) 50 foot wide transmission ROW. Using these conservative assumptions, edge of ROW magnetic flux density is projected to be 42.9 mG on the side with the conductors and 29.6 mG on the opposite side, and ROW EMF is projected to be 0.6 kilovolt per meter (kV/m) on the side of the ROW where the conductors are located and 0.2 kV/m on the opposite side of the ROW. These levels are well below the ICNIRP recommended exposure level of 833 mG for the general public and 4,167 mG for occupational exposure. (WatGen Exh. 1 at 14; WatGen Exh. 15, Resp. 23).
128. No significant power frequency electromagnetic disturbances are expected from the generating facility. All power frequency electric fields created by the generator and auxiliary equipment will be shielded by the enclosures around them. Magnetic fields created by the generator and auxiliary equipment will be significantly mitigated by the installation configuration and their distance from the general public. Electric and magnetic fields created in the switchyard will be significantly mitigated by distance from public access. (WatGen Exh. 15, Resp. 29).

Respectfully submitted,  
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**CERTIFICATE OF SERVICE**

I hereby certify that on this 3rd day of March 2008, a copy of the foregoing was mailed,

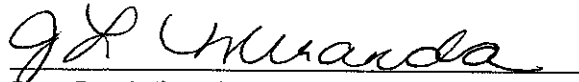
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